

## BIOLOGY

# Urge Human Sperm Banks

**A genetics expert believes human sperm banks must be established to prevent radiation damage to future generations. Persons working with high-level radiation would benefit most.**

► A WORLD FAMOUS geneticist has declared that human sperm banks must be established to prevent harmful radiation damage to future generations.

Dr. Herman J. Muller, Nobel Prize winning zoologist from Indiana University, recommended that sperm banks be made available now to young persons working with or exposed to high-level radiation. The sperm bank like the blood bank, would be strictly voluntary.

Human sperm would be frozen and stored far underground. The sperm cells would last for many years until they were needed, Dr. Muller told the American Institute of Biological Sciences meeting in Lafayette, Ind.

One start would be to make sperm banks available to families of all armed forces of the nuclear age and those working with radiation or participating in high-altitude flights. Plans are already under way, Dr.

Muller said, for intensive development of high-altitude commercial flights that would be dangerous for crews and passengers alike due to the high cosmic and solar radiation.

The success of the controversial plan for a sperm bank would depend on voluntary acceptance of artificial insemination by families.

"Dictation of the plan, whether by politicians, physicians or geneticists, would tend to be self-defeating," Dr. Muller said.

He envisions a group of sperm banks staffed by scientists and technicians. Sperm brought to the bank would be recorded in the individual's name and then stored at temperatures about 330 degrees below zero Fahrenheit.

Certain persons, such as those with mental illnesses, must necessarily be excluded from the program, Dr. Muller said.

"It is difficult to estimate when the sperm

banks would become widely accepted," Dr. Muller told SCIENCE SERVICE. However, the scientist views it as another step from the present practice of artificial insemination. Dr. Muller won the Nobel Prize for discovering that radiation causes inherited changes in the reproductive cells of living organisms.

• Science News Letter, 80:163 September 9, 1961

## Artificial Breeding

► ARTIFICIAL breeding programs for livestock are now believed practical for undeveloped countries.

West Virginia University scientists have developed a chemical solution that keeps sperm alive for long periods without refrigeration. The solution is expected to make artificial insemination of livestock practical in countries lacking refrigeration facilities.

Sperm cells of livestock have remained active even after being stored a week in the solution, Dr. Erwin Goldberg told the American Society of Zoologists meeting in Lafayette, Ind., as part of the American Institute of Biological Sciences. The chemical solution consists of sugar, antibiotics and a few simple salts.

With the present expensive methods of storage by refrigeration, sperm are active only two to three days and are subject to damage from the cold.

About 90% of the dairy cows in the United States are artificially inseminated. Artificial breeding with sperm stored in the new solution could also help reduce the food shortages in poorer countries, Dr. Goldberg said.

The experiments were conducted at West Virginia University laboratories, Morgantown, W. Va., by Dr. Goldberg, Dr. Charles Norman, Dr. I. D. Porterfield and C. J. Johnson. Future experiments on the human sperm are planned.

• Science News Letter, 80:163 September 9, 1961

## Cell Measures Radiation

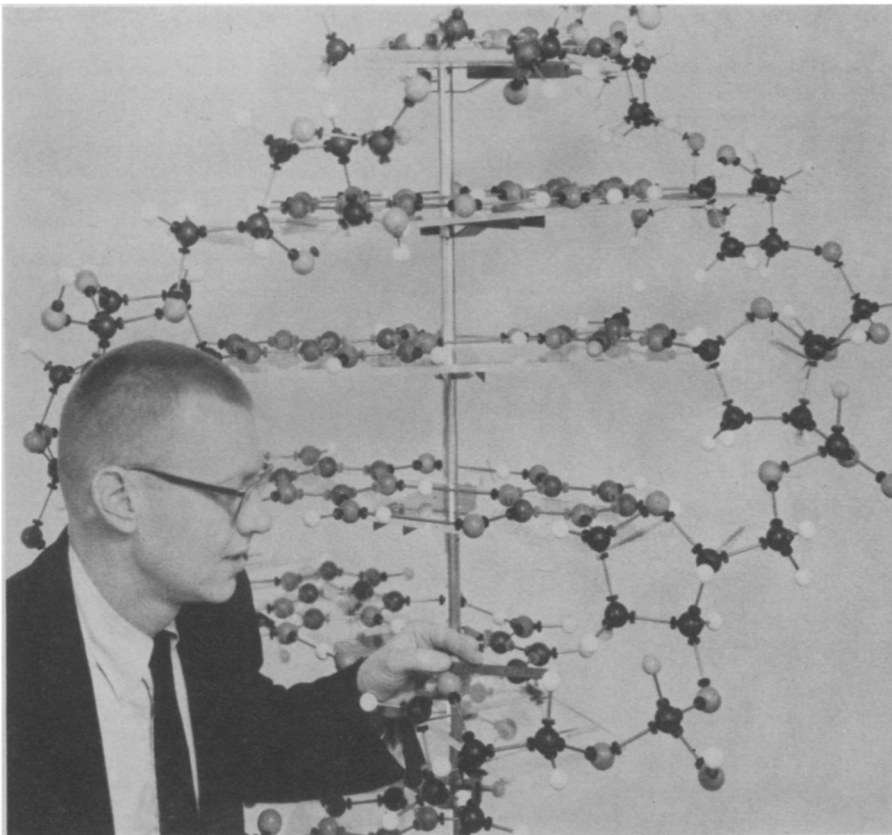
► A TINY living cell is the new yardstick for measuring the radiation hazard in space.

Bacterial spores riding on United States satellites into space developed a high degree of resistance after being pelted by a heavy dose of radiation. This new-found strength will be used as a "biological index" to test the effect of space radiation on living matter.

Spores recovered from Discoverer satellites XVII and XVIII were dunked in a hot sugar solution. Most of the spores survived. But similar bacterial spores untouched by radiation died immediately.

The tiny cells were stored in capsules above the Discoverer satellites. A stream of charged particles from a solar flare bombarded the Discoverer XVII satellite while it orbited around the earth. Both satellites, which were in orbit about three days, were launched late last year about a month apart.

The biological research on space radiation was conducted at the U.S. Air Force Aerospace Medical Center, Brooks Air



**DNA MODEL**—A scale model of the key to cell reproduction, deoxyribonucleic acid, DNA, displayed at the American Institute of Biological Sciences, Lafayette, Ind., was made by Central Scientific Co., Chicago. Dr. Quentin Petersen, Wabash College, Crawfordsville, Ind., shows a segment of the DNA chain he originally built. The entire chain would measure nearly three city blocks.

Force Base, San Antonio, Texas. Major Irving Davis, head of the program, described the research at a space symposium of the American Institute of Biological Sciences, Lafayette, Ind.

• Science News Letter, 80:163 September 9, 1961

## Cancer Found in Trout

► **CANCER** has been found in every trout fish hatchery in the United States.

A national survey conducted on Federal, state and local levels has shown that more than half of all rainbow trout artificially raised have cancer of the liver. The cause of the cancer is unknown.

In some hatcheries examined, every rainbow trout had cancer. The lowest figure reached was 10%, U.S. Fish and Wildlife experts, Drs. S. F. Snieszko and John A. Miller, reported.

The cancerous growth is not very malignant, causing very few fish deaths. No cases have yet been reported in which the disease was transmitted from one animal to another, the scientists emphasized.

"The public should not be excited, because the chances of getting cancer by eating the diseased trout is virtually nonexistent," Dr. Snieszko said.

The commercially prepared dried foods now fed to the fishes may contain the cancer-producing (carcinogenic) substances. The foods contain some meat plus additives such as vitamins and growth stimulants. The dried foods appeared on the market just ten years ago, causing many scientists to suspect them as the culprit.

The easy life of the fishes, eating all the food they want while growing rapidly, has also made the rainbow trout especially prone to diseases, the scientists told the American Society of Limnology and Oceanography meeting at the American Institute of Biological Sciences, Lafayette, Ind.

• Science News Letter, 80:164 September 9, 1961

## Hormones Aid Flowering

► **COLORFUL PLANTS** such as azaleas, African violets and chrysanthemums bloom much earlier by being injected with new hormones.

University of Wisconsin scientists, Drs. R. H. Roberts and B. E. Struckmeyer, have extracted blossom-stimulating hormones called anthogens from various plants. The hormones were used successfully on about 70 varieties of plants, the scientists told the American Institute of Biological Sciences meeting, Lafayette, Ind.

Three separate anthogens were isolated from plants in various stages of blooming. The hormones were then mixed with water and sprayed on the leaves of young plants.

Anthogens are fatty substances with a greasy feel, belonging to a group not generally credited with having physiological activity. Anthogens are especially promising in treating plants that take a long time to flower. African violets sprayed with the hormones came into full bloom even before tiny blossom buds appeared on untreated violets the same age.

The earlier flowering reduces the ex-

penses of growing greenhouse plants, the scientists said. Rapid growth of leaves, which normally accompanies flowering in nature, was also observed in stimulated plants.

The University of Wisconsin experiments show that the plant's response to days of different length (photoperiodism) is not the supposedly full explanation of why plants blossom. Photoperiodism does set up conditions, called "ripeness to flower," needed before applying the hormones.

The chemicals stimulating the "ripeness to flower" probably interact with the isolated hormones, and the flowering begins, they said.

• Science News Letter, 80:164 September 9, 1961

## Lichen Splits Into Two

► **LICHEN**, a tiny plant frequently found clinging to rocks, will separate into two plants if it does not like its location.

Lichens, which are actually a partnership between two lowly plants, algae and fungi, will split into these two plant groups if not enough water and food are present. The separated plants will then grow apart from each other, Dr. Vernon Ahmadjian, biologist at Clark University, Worcester, Mass., reported.

Dr. Ahmadjian's experiments show that lichens form "only as a matter of necessity, when both fungus and alga are in need of each other." If conditions favor independent growth, the lichen will not form, he told the Mycological Society of America meeting in Lafayette, Ind.

Algae are tiny organisms familiar to most persons as the green scum found on lake or pond surfaces. Fungi, which include such well-known plants as molds and mushrooms, are parasitic, depending on others for their food supply.

"The two organisms must be forced into forming the lichen," the scientist stated. During the union, the fungus obtains its food from the alga, while protecting the alga from drying up.

The meeting was sponsored by the American Institute of Biological Sciences.

• Science News Letter, 80:164 September 9, 1961

### PUBLIC HEALTH

## Amateur Divers Advised To Wear Porous Suits

► **AMATEUR DIVERS** are advised to wear suits of porous rubber if they wish to dive in cold waters.

Surgeon Lieutenant Antony Jarrett of the Royal Navy in a study of naval frogmen reported in the British Medical Journal, Aug. 19, 1961, states "reversed ear" was seen in 14. This is a condition in which tiny hemorrhagic spots appear in the ear canal, caused by a partial vacuum within the watertight rubber suit worn by the frogmen.

The basic cause of the reversed ear syndrome, Lt. Jarrett says, is that the watertight rubber suit converts the external ear canal into a closed cavity within which the pressure may fall below that of the body.

A porous rubber material cannot possibly

maintain a partial vacuum, the surgeon officer added, so the hemorrhagic spots that form in the skin under the wrinkles of a watertight suit do not form. A porous suit maintains body temperature efficiently, he reports, as it fills with and holds water in the same way that a woolen garment normally fills with and holds air.

Ear plugs should never be worn when traveling by air or when diving, Lt. Jarrett says, as there is danger of reversed ear when anything closes off the external auditory canal. "Reversed ear" is a term that has long been used by professional divers, but it is only this year that Lt. Jarrett reports the cause in Great Britain.

• Science News Letter, 80:164 September 9, 1961

## SCIENCE NEWS LETTER

VOL. 80 SEPTEMBER 9, 1961 NO. 11

Edited by WATSON DAVIS

The Weekly Summary of Current Science published every Saturday by SCIENCE SERVICE, Inc., 1719 N St., N.W., Washington 6, D. C., North 7-2255. Cable Address: SCIENSERV.

Subscription rates: 1 yr., \$5.50; 2 yrs., \$10.00; 3 yrs., \$14.50; ten or more copies in one package to one address, 7 1/2 cents per copy per week; single copy, 15 cents, more than six months old, 25 cents. No charge for foreign postage.

Change of address: Three weeks notice is required. When ordering a change please state exactly how magazine is addressed. Your new address should include postal zone number if you have one.

Copyright © 1961 by Science Service, Inc. Reproduction of any portion of SCIENCE NEWS LETTER is strictly prohibited. Newspapers, magazines and other publications are invited to avail themselves of the numerous syndicated services issued by Science Service. Science Service also publishes CHEMISTRY (eight times a year) and THINGS of science (monthly).

Printed in U.S.A. Second class postage paid at Washington, D. C. Established in mimeograph form March 13, 1922. Title registered as trademark, U. S. and Canadian Patent Offices. Indexed in Reader's Guide to Periodical Literature, Abridged Guide, and the Engineering Index. Member Audit Bureau of Circulation.



### SCIENCE SERVICE

The Institution for the Popularization of Science organized 1921 as a non-profit corporation.

Board of Trustees—Nominated by the American Association for the Advancement of Science: William W. Rubey, University of California at Los Angeles; Wallace R. Brode; Douglas Whitaker, Rockefeller Institute for Medical Research. Nominated by the National Academy of Sciences: Harlow Shapley, Harvard College Observatory; Philip Bard, Johns Hopkins University; Henry Allen Moe, John Simon Guggenheim Memorial Foundation. Nominated by the National Research Council: Leonard Carmichael, Smithsonian Institution; John R. Dunning, Columbia University; Benjamin H. Willier, Johns Hopkins University. Nominated by the Journalistic Profession: Michael J. Ogden, Providence Journal-Bulletin; O. W. Riegel, Washington and Lee University; Ralph B. Curry, Flint Journal. Nominated by the Scripps Estate: Edward J. Meeman, Memphis Press-Scimitar; Frank Ford, Washington, D. C.; Charles E. Scripps, Cincinnati, Ohio.

Officers—President, Leonard Carmichael; Vice President and Chairman of Executive Committee, Charles E. Scripps; Treasurer, Wallace R. Brode; Secretary, Watson Davis.

Staff—Director, Watson Davis. Assistant Director, Dorothy Schriver. Writers: Gloria Ball, Ann Ewing, Faye Marley, Vincent Marteka, David Meier, Tove Neville, Marjorie Van de Water, Judy Viorst, Burrell Wood. Science Youth Division: Joseph H. Kraus, Leslie Watkins. Photography: Fremont Davis. Production: Priscilla Howe, Marcia Nelson. Syndicate Sales: Hallie Jenkins. Conferences: Jane Marye. Librarian: Margit Friedrich. Interlingua Division in New York: Alexander Gode, 80 E. 11th St., GRamercy 3-5410. Advertising Manager: Fred A. Moulton, METropolitan 8-2562.